"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKNITSKIY, PAVEL NIKOLAYEVICH

22N/5
621.01
.L92

Soviet Tajikistan. Moskow, Foreign Languages Publishing House, 1954.
254 p. illus., maps.
Translated from the Russian: Sovetskiy Tadzhikistan.
Added T.-P. in Russian.

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LUKNITSKIY, P.

Lake created by a flash flood. Vokrug sveta no.11:41-43 N '54. (MLRA 7:11)
(Floods) (Lakes)

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LUKNITSKIY, Pavel Nikolayevich

[Travels in the Pamirs] Puteshestvie po Pamiru. Moskva, Molodaia gvardiia, 1955. 501 p. (MIRA 9:11)
(Pamirs--Description and travel)

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LUKNITSKIY, PAVEL NIKOLAYEVICH

LUKNITSKIY, PAVEL NIKOLAYEVICH

22?/5
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The Hissar Valley. Moscow, Foreign Languages Publishing House, 1957.
78 p. illus., Map.
Translation From The Russian: "V Gissarskoy Doline", (N.P. 1956?)

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LUKNITSKIY, P. N.

LUKNITSKIY, Pavel Nikolayevich; MAMAYEVA, O., red.; MIKHAYLOVSKAYA, N., tekhn.red.

[Tajikistan] Tadzhikistan [Izd. 2-oe, perer.] Moskva, Izd-vo TsK VLKSM "Molodaia gvardiia," 1957. 493 p. (MIRA 11:2)
(Tajikistan--Geography, Economic)

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LUKNITSKIY, V. V. and KOMAROV, A. M.

"Handbook for Power Station Hear Engineers", (Spravochnik dlya teplotekhnikov elektrostantsiy(, Gosenergoizdat, Moscow-Leningrad, 1949, 359 pp, 30 rubles.

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LUKNITSKIY, V. V.

The Efficiency of Steam-Electric Power Stations (Koeffitsienty poleznogo deystviya parovykh elektricheskikh stantsiy) Izd MEI (Moscow Power Engineering Institute), 1950, 14 pp.

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LUKNITSKIY, V. V.

Author: Luknitskii, V. V.

Title: Handbook on thermoelectric installations. Approved for the electric power engineering faculties and institutes. (Zadachnik po teplosilovym ustanovkam.) 183 p.

City: Moscow.

Publisher: State Printing House of Power Engineering

Date: 1950

Available: Library of Congress

Source: Monthly List of Russian Accessions, Vol. 4, No. 5, p. 316.

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LUKNITSKIY, V.V.

[Steam electric-power stations of industrial enterprises] Teplovye elektricheskie stantsii promyshlennykh predpriiatii. [2.,perer.i dop.izd.] Moskva, Gos. energ. izd-vo, 1953. 472 p. (MLRA 7:3)
(Electric power plants) (Steam engineering)

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LUKNITSKIY, V. V.

K. F. Roddatis

"Moderization of small capacity steam boiler." K. F. Roddatis, YU. S. Rubinov. Reviewed by V. V. Luknitskiy. Energ.biul. No. 3, 1953.

Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

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LUKNITSKIY, V.V.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr 1954)

Name	Title of Work	Nominated by
Luknitskiy, V.V.	"Thermal Electric Power Stations in Industrial Plants" (textbook)	Moscow Power Engineering Institute imeni V.M. Molotov

SO: W-30604, 7 July 1954

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKNITSKIY, V. V.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr 1954)

Name	Title of Work	Nominated by
Rubinshteyn, Ya, M. Blyudov, V. P. Vyhubov, D. N. Kornitskiy, S. Ya. Litvin, A. M. Luknitskiy, V. V. Morozov, N. G. Prokhorov, F. G. Yakub, B. M.	"General Thermal Engineering" (student manual 2d edition)	Moscow Power Engineering Institue imeni V. M. Molotov

SO: W-30604, 7 July 1954

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKNITSKIY, Vsevolod Vsevolodovich; BOGORODSKIY, A.S., redaktor; LARIONOV, G.Ye., tekhnicheskiy redaktor

[A manual of problems for heat technicians of electric power plants] Zadachnik po teplovym elektricheskim stantsiiam. Izd. 2-oe, perer. i dop. Moskva, Gos. energ. izd-vo, 1956. 232 p. (MLRA 9:9)
(Electric power plants)
(Electric engineering--Problems, exercises, etc.)

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

Lukhitskiy, V.V.

GERASIMOV, S.G., professor, redaktor; KAGAN, Ya.A., kandidat tekhnicheskikh nauk, redaktor; LEBEDEV, P.D., professor, glavnyy redaktor; LUKHITSKIY, V.V., professor, redaktor [deceased]; SHEYNDLIN, A.Ye., professor, redaktor; AYZENSHTAT, I.I., redaktor; VORONIN, K.P., tekhnicheskiy redaktor

[Heat engineering handbook] Teplotekhnicheskii spravochnik. Moskva, Gos.energ.izd-vo. Vol.1. 1957. 728 p. (MLRA 10:9)
(Heat engineering)

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKNOV, T.

Distr: 4E3d

The isolation of furfural from water-furfural mixtures by rectification. K. Dimov, T. Luknov, and St. Zhulev. *Khim. i Ind.* (Sofia) 29, No. 7-8, 15-16(1957).—Distillates and hydrolyzates of mixts. of wheat chaff and sunflower seed shells contg. from 5.5-43.8 g./l. furfural when subjected to rectification yielded a max. of 82% of the latter. N.

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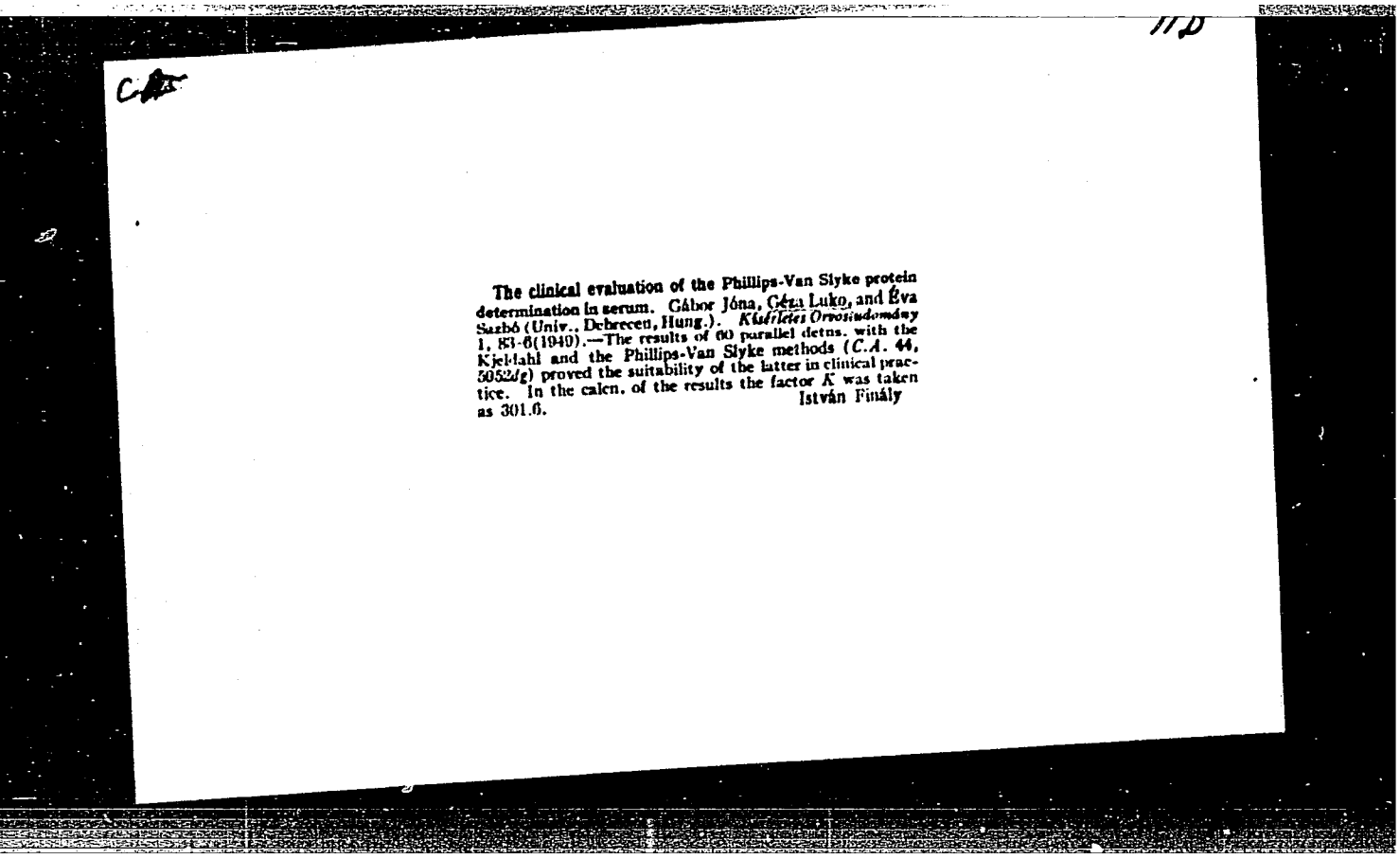

The clinical evaluation of the Phillips-Van Slyke protein determination in serum. Gábor Jóna, Géza Luko, and Éva Szabó (Univ., Debrecen, Hung.). *Kísérletes Orvostudomány* 1, 83-6(1949).—The results of 60 parallel detns. with the Kjeldahl and the Phillips-Van Slyke methods (*C.A.* 44, 5052*g*) proved the suitability of the latter in clinical practice. In the calcn. of the results the factor *K* was taken as 301.6.

István Finály

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKO, G.

Combined dexiothoraco-abdominal esophagectomy and esophagogastrostomy in caustic stenosis of the upper esophagus. Magy. sebeszet 6 no.3:189-192 Aug 1953. (CIML 25:5)

1. Doctor. 2. First Surgical Clinic (Director -- Prof. Dr. Janos Loessl), Debrecen Medical University.

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKO, Geza, Dr.; NAGY, Tibor, Dr.

Herniation of the efferent jejunal loop following gastric resection. Magy. sebeszet 11 no.2:143-146 Apr-June 58

1. A debreceni Orvostudomanyi Egyetem I. sz. Sebeszeti Klinikajanak kozlemenye Mb. igazgato: Dr. Szeleczky Gyula docens. az orvostudomanyok kandidatusa.

(GASTRECTOMY, compl.
hernia of efferent jejunal loop (Hun))
(JEJUNUM, dis.
hernia of efferent loop following gastrectomy (Hun))

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

Luko, Geza

LUKO GEZA

Closed thoracic injuries. Orv. hetil. 99 no.5:151-154 2 Feb 58.

1. A Debreceni Orvostudomanyi Egyetem I. sz. Sebeszeti Klinikajanak (megbizott igazgato: Szelecky Gyula, egyet. docens, az orvostudomanyok kandidatusa) kozlemenye.

(THORAX, wds. & inj.
closed inj., surg. aspects (Hun))

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

TORNAI,Alajos,dr.; LUKO,Geza,dr; KERESZTURI,Sandor,dr.

Cholecystitis in newborn and older children. Orv. hetil. 101 no.17:601-604 24 Ap '60.

1. Debreceni Orvostudomanyi Egyetem, Gyermekklinika,I. sz. Sebeszeti Klinika, Korbonstani Intezet.
(INFANT NEWBORN dis.)
(CHOLECYSTITIS in infant & child)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

HUNGARY

LUKO, Geza, Dr, SZEKER, Kalman, Dr; Hospital of the Jaras Council, Surgical Ward (Jarasi Tanacs Korhaza, Sebeszeti Osztaly), Kapuvar.

"Indications for Reoperation After Gall Bladder Surgery."

Budapest, Orvosi Hetilap, Vol 104, No 28, 14 July 1963, pages 1308-1311.

Abstract: The authors describe the causes of postoperative complaints in gall bladder surgery. Remaining mechanical obstructions are indications for reoperation. Symptoms of these are presented in the article with qualifying remarks. The usefulness of intraoperative cholangiographic control is stressed. Several cases observed by the authors are described. 7 Hungarian, 8 Western references.

1/1

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKOD'YANOV, I., inzh.

Fire archipelago. IUn.tekh. 4 no.7:30-32 Jl '60.(MIRA 13:9)
(Baku Archipelago--Vulcanoes)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKOD'YANOV, I., inzh.; SHTUNG, R., inzh.

Bridges in the open sea. IUn.tekh. 4 no.8:32f-32g, 38-39 Ag '60.
(MIRA 13:9)
(Bridges, Iron and steel)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKOD'YANOV, I., inzh. Luk

Flexible floating containers substitute for tank vessels.
IUn.tekh. 5 no.8:21-23 Ag '61. (MIRA 14:12)
(Petroleum--Transportation)
(Containers--Floating)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKOD'YANOV, I., inzh.

What was the weight of "Durande's" steam engine? IUn.tekh. 6 no.12:62-64 D '61. (MIRA 14:12)

(Lifting and carrying)
(Oil well drilling, Submarine--Study and teaching)

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LUKOD'YANOV, I.B.

ALLAKHVERDIYEVA, V.A., inzhener; BABALYAN, N.A., inzhener; GUSEYNOV, M.A., inzhener; GOSEYNOV, S.B., inzhener; DADSHEV, B.B., kand.tekhn.nauk; KORNEV, T.N., kand.tekhn.nauk; LUKOD'YANOV, I.B., inzhener; MAMED'YAROVA, Z.D., inzhener; PIVOVAROV, I.F., inzhener; SAROYAN, A.Ye., inzhener; SHNEYDEROV, M.R., kand.tekhn.nauk; SHVARTSMAN, L.A., kand. tekhn.nauk; ERLIKH, G.M., inzhener; AL'TMAN, T.B., red.izdatel'stva.

[Reference manual on pipes used in petroleum engineering] Spravochnik po neftepromyslovym trubam. Baku, Azerbaidzhanskoe gos.izd-vo neft. i nauchno-tekhn.lit-ry, 1957. 446 p. (MIRA 10:12)
(Pipe)

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MEKHTIYEV, E.Kh.; SHTUNG, R.L.; LUKOD'YANOV, I.B.

Cantilever guy crane in the construction of offshore movable platforms. Azerb.neft.khoz. 38 no.12:37-39 D'59. (MIRA 13:10)
(Cranes, derricks, etc.)

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKOJC, P.

For the improvement of forest studies in Poland. p. 78.

SYLWAN. (Wydzial Nauk Rolniczych i Lesnych Polskiej Akademii Nauk i Polskie Towarzystwo Lesne) Warszawa, Poland Vol. 101, no. 8, Aug. 1957

Monthly list of East European Accessions Index (EEAI), LC, Vol. 8, no. 6, June 1959
uncla.

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LUKOMINIK, S. I.

Association of high transitory myopia with onset of acute glaucoma in disulfane poisoning. Vest. oft., Moskva 30 no. 5:37-38 Sept.-Oct. 1951. (CIML 21:3)

1. Of the Scientific-Research Ophthalmological Institute (Director -- Honored Physician of the Republic A. A. Abbasov; Scientific Supervisor -- Honored Worker in Science Prof. S. I. Balikhan).

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LUKOMNIK, A.Ya.

Study of the pathogens of phlegmons of the perimaxillary region. Trudy 1-go MMI 44:104-108 '65.

(MIRA 18:12)

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LUKOMNIK, S. I.

LUKOMNIK, S. I.: "Results of the conservative and surgical treatment of simple and inflammatory forms of glaucoma, based on material from the ophthalmological institute." Sci R s Ophthalmological Inst, Min Health Azerbaydzhan SSR. Baku, 1956.
(Dissertation for the degree of Candidate in Medical Sciences)

SO: Knizhnaya Letopis', No. 36, 1956, Moscow.

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LUKOMNIK, S. I., Cand Med Sci -- (diss) "Results of conservative and surgical treatment of the simple and inflammatory (choked) forms of glaucoma according to data from the Ophthalmological Institute." Baku, United Publishing House, 1960. 17 pp; (Azerbaydzhan State Medical Inst im N. Narimanov); 220 copies; free; (KL, 30-60, 140)

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LEWICKI, A.; KUBINSKA, H.; KULIKOWSKA, A.; LUKOMSKA, A.

Psychological studies on the mental state of patients treated with geriocaine. Neurol. neurochir. psychiat. pol. 12 no.1:63-66 '62.

1. Z Katedry Psychologii Ogolnej Uniwersytetu M. Kopernika w Toruniu Kierownik: prof. dr A. Lewicki i Sanatorium Geriatrycznego w Inowroclawiu Dyrektor: dr B. Snarski.

(GERIATRICS)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LEWICKI, A., prof. dr; KUBINSKA, H.; KULIKOWSKA, A; LUKOMSKA, A.

Psychological studies on the psychic state of patients treated with Geriocaine. Neurol neurochir psych 12 no.1:63-66 Ja-F '62.

1. Katedra Psychologii Ogolnej, Uniwersytet M. Kopernika, Torun; Kierownik: prof. dr A Lewicki; i Sanatorium Geriatryczne, Inowroclaw; Dyrektor: dr B. Snarski.

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

SZERESZEWSKA, Halina; LUKOMSKA, Barbara; CHODERA, Leon; CELLARY, Jerzy

Syndrome of the superior vena cava. Polski tygod. lek. 11 no.26: 1153-1160 25 June 56.

1. Z I Klin. Chor. Wewn. A.M. w Poznaniu; kier. prof. dr. S. Kwasniewski i z Oddzialu Chirurgii Torakalnej Szpitala Mlejskiego w Poznaniu; kier. doc. dr. J. Moll. Poznan, I Kl. Chor. Wewn. A.M.
(VENAE CAVAE, diseases,
obstruct. synd. (Pol))

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

MOLL, Jan; LUKOMSKA, Barbara

Resection of the lung tissue in pulmonary tuberculosis in children. Gruzlica 24 no.8:817-826 Aug 56.

1. Z Oddzialu Chirurgii Torakalnej Szpitala Miejskiego w Poznaniu, Kierownik: doc. dr. J. Moll.
(TUBERCULOSIS, PULMONARY, in inf. and child surg., statist.)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

MOLL, Jan. TYBORSKI, Henryk; STASINSKI, Tadeusz; LORKIEWICZ, Zbigniew; LUKOMSKA, Barbara; SLIWINSKI, Marian; ADAMSKI, Stanislaw; SOKOLOWSKI, Konstanty; SKOTNICKI, Stefan.

Treatment of cardiac defects with the use of the MPS 1 apparatus and deep hypothermia. Pol. arch.med.wewnet. 34 no.3: 299-306 '64.

1. Z Oddzialu Chirurgii Torakalnej Szpitala Miejskiego im. J.Strusia w Poznaniu i II Kliniki Chirurgicznej AM w Lodzi (kierownik: prof.dr.med.J.Moll) Zakladu Radiologii AM w Poznaniu (kierownik: prof.dr.med. B.Gladysz) i III Kliniki Chorob Wewnetrznych AM w Poznaniu (kierownik: prof.dr.med. K.Wysocki).

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

MOLL, Jan, prof. dr. med.; LUKOMSKA, Barbara; STALEWSKI, Jerzy; SOKOLOWSKI, Konstanty.

Pulmonary resection in tuberculosis. Pol. tyg. lek. 19 no.52: 2003-2005 28 D'64.

1. Z Oddzialu Chirurgii Torakalnej Szpitala Miejskiego im. J. Strusia w Poznaniu (ordynator: prof. dr. med. Jan Moll).

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKOMSKA, Krystyna

Surgical treatment of the aneurysm of the accessory splenic artery. Przegl. lek. 21 no.9:572-573 '65.

1. Z Oddzialu Chirurgicznego Szpitala Powiatowego w Sanoku (Ordynator: Dr. med. J. Zigmund).

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKOMSKA-CHUDAK, Barbara

Considerations on selecting children for pulmonary resection from anesthesiologist's viewpoint. Postepy hig. med. dosw. no.2:68-69 '60.

1. Z Oddzialu Chirurgii Torakalnej Szpitala im. J. Strusia w Poznaniu Ordynator: doc. dr Jan Moll.

(PNEUMONECTOMY in inf & child)
(ANESTHESIA GENERAL in inf & child)

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKOMSKAYA, A. I.

LUKOMSKAYA, A. I. - "Investigation of Dielectric Properties of Carbon Black-Rubber Mixtures." Sub 11 Feb 52, Moscow Inst of Fine Chemical Technology imeni M. V. Lomonosov. (Dissertation for the Degree of Candidate in Chemical Sciences).

SO: Vechernaya Moskva January-December 1952

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LUKOMSKAYA, A. I.

(2 Marks)

Rubber Abst.
Vol. 32 No. 1
Jan. 1954
Synthetic Rubbers and Like Products

84. Structure and properties of loaded rubber mixtures. X. Dielectric properties of two-component carbon mixtures from sodium-butadiene rubber. M. A. Dogadkin and A. I. Lukomskaya. *Kolloid. Zhur.*, 1953, 15, 183–94; *Chem. Abs.*, 1953, 47, 9013. Cf. this journal, 1953, abs. 2638. The dielectric constant ϵ and tan δ (δ=angle of dielectric loss) of sodium-butadiene rubber were independent of frequency f between 10^3 and 4×10^4 cycles and almost independent of temperature. When 100 g. of the rubber was mixed with x cc. of carbon, the coefficient of dielectric loss (ϵ^1 equal to ϵ tan δ) of films obtained from the mix was greater the greater the x and had a maximum at f=2,000 for channel black and at f=2,700 for thermal black, both at 20° C. At $f > 10^6$, ϵ^1 was almost independent of f. The maximum ϵ^1 varied little with temperature between −70° and 150° C. The equations for the ϵ^1 of mechanical mixtures can be reconciled only if ϵ^1 is a sum of 3 components: one caused by mechanical inhomogeneity, one due to conductivity, and one due to structure. The effects of the carbon blacks on tension strength and elongation is also reported. 3S2D21.66344

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9-9-54

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

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LUKOMSKAYA, A.I.

538. Structure and properties of loaded rubber mixtures. XI. Dielectric properties of vulcanised carbon-black mixtures of sodium butadiene rubber. A. I. LUKOMSKAYA and B. A. DOGADKIN. *Kell. Zhur.*, 1953, 16, 269–70; *Consultants Bureau Trans.*, 267–77. Cf. this journal, 1954, abs. 4375. A translation of this paper is now available.

3S2D21.66344

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKOMSKAYA, A.

4

Structure and dielectric properties of rubber mixtures containing carbon black. B. A. Dogadkin and A. Lukomskaya. *Doklady Akad. Nauk S.S.S.R.* 88, 1015–18(1953).—The authors investigated the bonds between natural and Na butadiene rubber and C black (I) used as filler. The following mixts. in ml./100 g. of rubber were prepd.: natural rubber + 0–10 ml. of channel I, or + 10–20 ml. of furnace I, butadiene rubber + 0–20 ml. of channel I or + 10–30 ml. of furnace I. The bonds were detd. by the examn. of the relationship between the coeff. of dielec. losses and the a.-c. frequency in unvulcanized rubber, unvulcanized compounded mixt. of rubber + I, and in vulcanized rubber without and with I. Frequencies of $50–2.5 \times 10^6$ at 20° and $10^2–4 \times 10^4$ cycles/sec. at −75 to 152° were used. It was established that up to 150° there is linear relationship between the logarithm of elec. cond. and $1/T$, where T = abs. temp. This proves the strength of I lattices. At the same time the influence of I on the orientation of dipoles in rubber, which is transmitted by the compds. formed between rubber and I, stops at 100–120°. There are 3 different dielec. losses in rubber compounded with I: the loss due to a nonhomogeneous dielectric, the loss caused by the conductance, and the loss caused by the above mentioned lattices in rubber. Presumably the groups of atoms in rubber mols. are polarized among particles of I and as they are not too tightly packed they vibrate in an elec. field. The authors conclude that the formation of lattices of I in rubber, in which the reaction between the particles of I is greater than the energy of the reaction between rubber and filler, has great bearing on the mech. properties of rubber. Behavior of rubber in elec. and mech. field is considered analogous. F. J. H.

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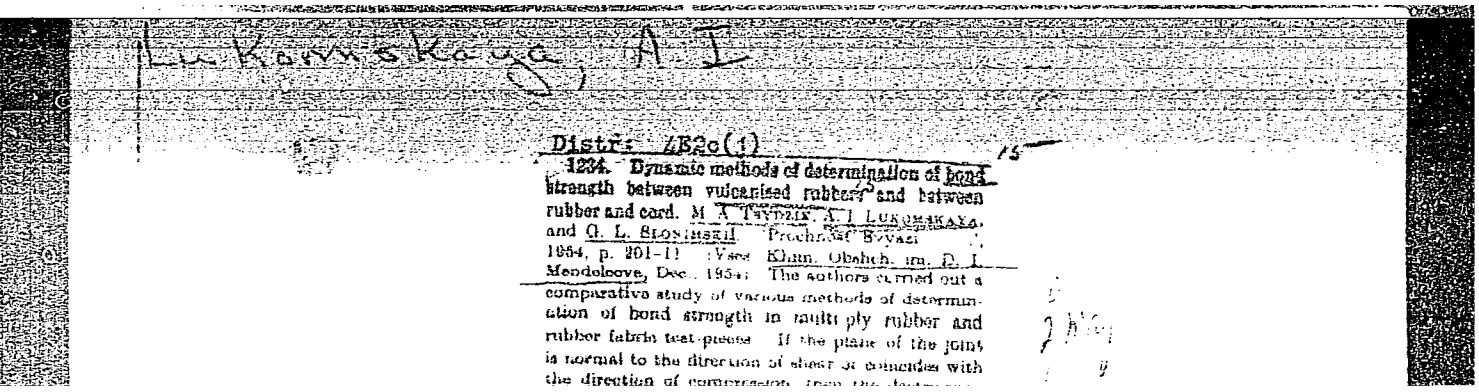

Distr: 4E2c(1)

1234. Dynamic methods of determination of bond strength between vulcanized rubbers and between rubber and cord. M. A. Tsvetkov, A. I. Lukomskaya, and O. L. Stoyanovskii. Prochnost' Kauch. i Rezin, 1954, p. 201-11; Vses. Nauch.-Issled. Inst. im. D. I. Mendeleeva, Dec., 1954. The authors carried out a comparative study of various methods of determination of bond strength in multi ply rubber and rubber fabric test-pieces. If the plane of the joint is normal to the direction of shear it coincides with the direction of compression from the [illegible]

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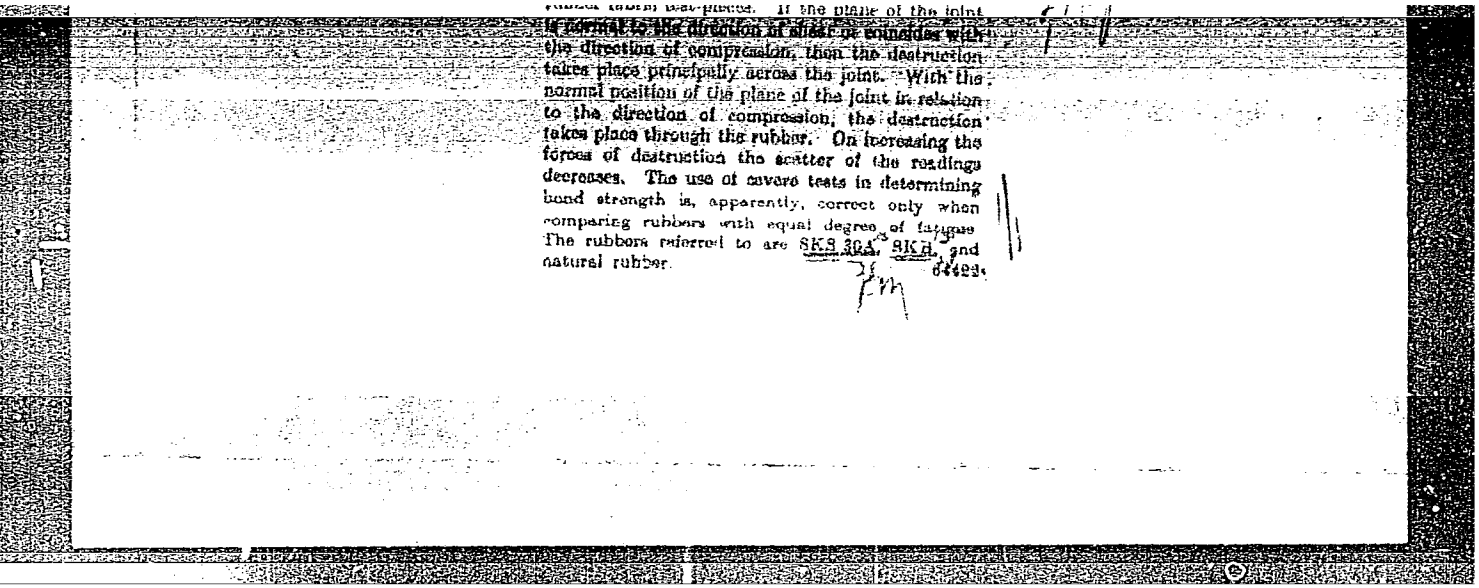

rubber taken test-pieces. If the plane of the joint normal to the direction of shear or coincides with the direction of compression, then the destruction takes place principally across the joint. With the normal position of the plane of the joint in relation to the direction of compression, the destruction takes place through the rubber. On increasing the forces of destruction the scatter of the readings decreases. The use of cavare tests in determining bond strength is, apparently, correct only when comparing rubbers with equal degree of fatigue. The rubbers referred to are SKS 30A, SKB, and natural rubber.

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKOMSKAYA, A. I.

Structure and properties of loaded rubber mixtures. XII. Dielectric properties of carbon-rubber mixtures from natural rubber. A. I. Lukomskaya and B. A. Dogadkin (Sci. Research Inst. Tire Ind., Moscow). *Kolloid. Zhur.* 16, 36–43(1954); cf. *C.A.* 47, 12869*h*.—The tensile strength σ (kg./sq. cm.), dielec. const. ϵ, and the coeff. of dielec. loss ϵ' ($= \epsilon \tan \delta$) of smoked-sheet films were 4.2, 2.4, and 0.0065. There was no max. on the ϵ'-temp. and ϵ'-frequency (f) curves. Addn. of 10% channel C black (I), extd. I (II), or thermal C black (III) changed σ to 6.0, 5.7, and 2.5, resp., and caused appearance of a max. on the ϵ'-f curves; the max. ϵ' were 0.22, 0.14, and 0.05 for I, II, and III, resp.; and the corresponding f was approx. 2100–2700 sec.$^{-1}$ for all C black samples. The *form factor* was 1 for III, but >1 for I and II. Vulcanized rubber had one max. of ϵ' (0.15 at 2.3×10^5 cycles/sec.), while vulcanizates contg. C had 2 max. each; thus ϵ' of vulcanizate + 10% I had max. at 8×10^3 ($\epsilon' = 0.28$) and 3×10^5 cycles/sec. ($\epsilon' = 0.34$), and of vulcanizate + 15% III had max. at 2×10^3 and 1.7×10^5 cycles/sec. ($\epsilon' = 0.06$ and 0.19, resp.). The first max. is caused by the nonuniformity of the rubber-C black mixt., and the 2nd max. is due to orientation of S dipoles. The moment of these dipoles was 0.68–0.74 $\times$ 10^{-18}. Vulcanizates contg. no C black had a max. of ϵ at a temp. which was greater, the greater f; e.g., −5° and +25° for $f = 10^3$ and 4×10^4, resp. Also the max. of ϵ' was at a temp. which was higher the greater was f; at $f = 10^3$, ϵ' was 0.02, 0.20, and 0.01 at −70°, −25°, and 50°. Addn. of C black raised the viscosity, η, of smoked sheet more than of Na-butadiene rubber; η increased from III to II to I; e.g., 20% III raised η of smoked sheet 3.5-fold. The contributions to ϵ' by inhomogeneity, elec. cond., structure, and S dipoles are calcd. for f between 50 and 2.5×10^7 and for temps. between −70° and 152°.

J. J. Bikerman

10-15-54

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKOMSKAYA, A. I., and DOGADKIN, B. A.

"Dielectric Properties of Filled Rubbers and the Problem of Reinforcing Natural Rubber" (Dielektricheskiye stoystva napolnennykh rezin i problema usileniya kauchuka) from the book Trudy of the Third All-Union Conference on Colloid Chemistry, pp. 363-370, Iz. AN SSSR, Moscow, 1956

(Report given at above Conference, Minsk, 21-4 Dec 53)

Authors: Moscow Scientific Research Institute of the Tire Industry

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKOMSKAYA, A. I.

USSR/Chemical Technology. Chemical Products and Their Application -- Crude rubber, natural and synthetic. Vulcanized rubber, I-21

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 6021

Author: Orlovskiy, P. N., Lukomskaya, A. I., Bogatova, S. K.

Institution: None

Title: Concerning Methods for the Evaluation of Technological Properties of Carbon Black Rubber Mixes

Original Publication: Khim. prom-st', 1956, No 4, 217-224

Abstract: Comparison of elastic recovery indices (E) determined by means of compression plastometers of Williams and Defo type, Muni type shear plastometer, and extrusion plastometer operating at a given rate of deformation, with the shrinkage values (S) of three-component mixtures of SKB rubber, stearin and carbon black, containing varying amounts of channel, furnace and lamp carbon black, after calendering or extrusion in a worm-gear press. Shear and extrusion plastometers, which provide testing conditions that are analogous to the

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USSR/Chemical Technology. Chemical Products and Their Application -- Crude rubber, natural and synthetic. Vulcanized rubber, I-21

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 6021

Abstract: conditions of processing of the mixtures in industrial equipment, correlate E and S. The Defo type plastometer gives a very approximate evaluation of S on the basis of the index E/P_D, wherein P_D is Defo hardness. Williams type plastometer is not suitable for an evaluation of S. A method has been worked out for the determination of the roughness coefficient C, in order to evaluate the condition of the surface of a calendered sheet of the mixture: $C = \pi abt/4v_o$, where a, b and t are, respectively: minor axis, major axis and thickness of an ellipse obtained after relaxation (shrinkage) of a circular sample cut on the middle roller of a three-roller calender, v_o being the actual volume of the sample. The shear plastometer makes it possible to evaluate C on the basis of an empirical equation of the type:

$$1/C\% = A/R_K\% + (1 - A)/I\%$$

wherein $R_K\%$ is the ratio in percent of the E of the filled mixture, recomputed for the content of the rubber phase in the mixture, to the E of the unfilled mixture; I% is the ratio in percent of the drop

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

USSR/Chemical Technology. Chemical Products and Their Application -- Crude rubber, natural and synthetic. Vulcanized rubber, I-21

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 6021

Abstract: in viscosity I of the filled mixture to that of the unfilled mixture; C% is the ratio in percent of the roughness coefficient C of the filled mixture, to that of the unfilled mixture; and A = 0.5. Drop in viscosity I = (V' - V")/V", where V' and V", respectively, are viscosity values according to Muny, determined immediately after the beginning of the test, and during the 3rd minute. In an analogous manner an evaluation of C is made on the basis of data secured by means of the extrusion plastometer (according to drop in pressure and shrinkage in the apparatus), at two different rates of extrusion.

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKOMSKAYA, A. I.

124-58-9-10674

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 9, p 171 (USSR)

AUTHORS: Lukomskaya, A. I., Reznikovskiy, M.M.

TITLE: On Methods of Dynamic Testing of Rubber (A Literature Survey) [O metodakh dinamicheskikh ispytaniy rezin. (Obz. lit.)]

PERIODICAL: Tr. N.-i. in-ta shin. prom-sti, 1957, Nr 4, pp 36-61

ABSTRACT: Bibliographic entry

1. Rubber--Test methods

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APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 10, p 164 (USSR)

SOV/124-58-10-11932

AUTHORS: Tsydzik, M. A., Lukomskaya, A. I.

TITLE: An Improved Method for High-temperature Tensile Creep Testing of Rubber (Usovershenstvovaniye metoda opredeleniya polzuchesti rezin pri rastyazhenii v usloviyakh povyshennoy temperatury)

PERIODICAL: Tr. N.-i. in-ta shin. prom-sti, 1957, Nr 4, pp 113-125

ABSTRACT: A brief analysis of existing methods of creep testing of rubbers and other high polymers is presented. The authors propose an improved method for creep testing of annular specimens made of vulcanized rubber when subjected to tensile stresses at elevated temperatures. The creep-testing device is described together with operational procedures employed. The device is capable of increasing the loading of specimens gradually and of maintaining constant temperature and, whenever necessary, constant stresses. A rheological model of a polymer is presented together with an equation expressing the degree of constant-stress deformation as a function of time. It is established that creep criteria in rubber depend on the thickness of the specimens, their specific

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An Improved Method for High-temperature Tensile Creep Testing of Rubber

loading, and the testing temperature. It is demonstrated that at room temperature the phenomenon of creep is a reversible process tied to the retarded elastic deformation; at elevated temperatures, however, the creep coincides with irreversible deformation and may serve as a measure of the aging of rubber. Bibliography: 17 references.

S. A. Ivanov

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKOMSKAYA, A.I.

LUKOMSKAYA, A.I.

Comparison of methods for determining the resistance of tread rubbers to the formation and development of cracks. Kauch. i rez. 16 no.11:4-9 N '57. (MIRA 11:2)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.
(Rubber--Testing)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

SOV/138-58-5-7/9

AUTHOR: Kanavets, I.F., Lukomskaya, A.I., Reznikovskiy, M.M.

TITLE: On the Possibility of Using the Kanavets Displacement Plastometer for Testing Rubber and Plastic Mixtures (O vozmozhnosti primeneniya sdvigovogo plastometra Kanavtsa dlya ispytaniya kauchukov i rezinovykh smesey)

PERIODICAL: Kauchuk i Rezina, 1958, Nr 5, pp 34-36 (USSR)

ABSTRACT: Various devices used for testing the plastic and elastic properties of rubbers and unvulcanised rubber mixtures, such as viscosimeters VR-1 (constructed by NIIShP) and the viscosimeter VR-2 (constructed by "Metallist") as well as others are mentioned (Refs.1-6). The advantages of the Kanavets displacement plastometer, as compared with its other instruments, are discussed. This device is used in the rubber industry for testing rubbers and unvulcanised rubber mixtures and makes it possible to determine their viscosity. The use of this device for ascertaining the capacities of these mixtures for vulcanisation was described by J.V.Weaver and

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On the Possibility of Using the Kanavets Displacement Plastometer for Testing Rubber and Plastic Mixtures

A.E.Juve (Refs.10 and 11). Changes in the viscosity of various rubber mixtures (based on different rubbers and fillers) during deformation at 121°C, whilst testing them in the viscosimeter VR (NIIShP) and in the plastometer by Kanavets (NIIPM) are shown in Figures 1 and 2. It was found that the time of relaxation bears no simple relation to the elastic recovery of the mixture. Fig.3. shows the sensitivity of this plastometer to changes in the age of a mix and change in order of combining components of the mix. The different samples of the same mix stabilize at the same viscosity after about 1 minute. When using the Mooney plastometer, the way of preparing the mixtures and especially of rubbers, is very important but this does not apply in the case of the Kanavets plastometer. The constant of viscosity changes with small variations in the content of plasticisers and fillers in the rubber mixtures; this makes it possible to assess the accuracy of composition of the mixture (Fig.4.). The correct proportions of vulcanisation agents and

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On the Possibility of Using the Kanavets Displacement Plastometer for Testing Rubber and Plastic Mixtures

accelerators introduced into the mixture can be controlled according to the rate of vulcanisation, i.e. rate of rise in viscosity at temperatures up to 200°C. (Fig.5.). There are 5 figures and 11 references of which 7 are English and 4 Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific-Research Institute for the Tire Industry)

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKOMSKAYA, A.I.

Some characteristics of the strengthening action of carbon blacks, resulting from the tear behavior of filled rubbers. Vysokom. soed. 1 no.9:1287-1294 S '59. (MIRA 13:3)

1.Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.
(Rubber--Testing) (Carbon black)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

15(9) SOV/20-127-6-17/51

AUTHOR: Lukomskaya, A. I.

TITLE: An Approximation Analysis of the State of Stress of Rubber Samples Tested on Tearing by Different Methods

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 127, Nr 6, pp 1207-1209 (USSR)

ABSTRACT: The object of the present paper is an analysis of the connection between the phenomena of rupture and tearing by a method of approximation. The sample preparation, and the sample type, are described, the most essential thing being a rectangular network applied to the nondeformed sample indicating the deformation. Figure 2 shows a deformed sample at the beginning of tearing. The values of the functions (1) are empirically determined by the displacement of the individual points of the rectangular network. The coupling between the compohents of the stress- and deformation tensors is described by the elasticity potential F. This is a function of the degree of deformation λ_i and of two constants, the determination of which is carried out according to a paper (Ref 9). For the determination of the numerical values of λ_i, the

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

An Approximation Analysis of the State of Stress of Rubber Samples Tested on Tearing by Different Methods

theory of finite deformation introduced by D. I. Kutilin is applied, and the affinor of the deformation (2) is given. From this, the above-mentioned numerical values are determined, and the direction cosines are obtained from (4). The results of the analysis are compiled in table 1. There are 2 figures, 1 table, and 9 references, 6 of which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tire Industry)

PRESENTED: March 28, 1959, by V. A. Kargin, Academician

SUBMITTED: March 21, 1959

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

15(9) SOV/20-128-1-19/58

AUTHORS: Reznikovskiy, M. M., Lukomskaya, A. I.

TITLE: On the Relation Between the Phenomena of Rupture and Tear in Rubber

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 1, pp 75 - 77 (USSR)

ABSTRACT: In some previous papers (Ref 4) on the "tear" of rubber an approximate theory of this phenomenon was developed. It yields a quantitative relation between the so-called characteristic energy T of tear and the specific energy E of rupture. One of the principal errors of this theory is the neglect of the statistic nature of strength and of the resultant dependence of the latter on the size of the sample under investigation, or on the value of the volume to be deformed. However, breaking tests exhibit the following special features: Due to artificial concentration of tensions, destruction always takes place in a definite, minute volume at the end of the increasing cut. This is why the results of breaking tests can be compared only if the essential difference in the size of the samples under investigation is taken into account. The increase in strength

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with decreasing size of the above samples is easily explained by the statistic theory as less dangerous damages occur in smaller volumes. This assumption is confirmed by several experimental data. The approximate method of extrapolating the qualitative estimation of the true tensions produced at the end of the cut was employed in an investigation carried out in the authors' laboratory. Various kinds of samples were subjected to breaking tests. In most cases, the (obviously too small) values of the desired tension exceeded those obtained from ordinary breaking tests. The characteristic energy of tear cannot be ascertained from the random value of the elastic energy E (resulting from ordinary breaking tests), but from a certain limit E_o, which corresponds to the minute size of the volume deformed at the end of the increasing cut. $T=dE_o=dkE$ is thus obtained, the coefficient $k= E_o/E$ increases with the decrease of strength of the rubber under investigation as a result of random damages or inhomogeneities of the structure. $k \sim T/E$ is approximately found. This and other facts mentioned give a satisfactory confirmation of the respective ideas.

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

On the Relation Between the Phenomena of Rupture and Tear in Rubber SOV/20-128-1-19/58

There are 2 tables and 5 references, 1 of which is Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute for the Tire Industry)

PRESENTED: March 28, 1959, by P. A. Rebinder, Academician

SUBMITTED: March 23, 1959

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

S/138/60/000/002/003/009
A051/A029

AUTHOR: Lukomskaya, A.I.

TITLE: On the Testing Methods of Tear Resistance in Rubber

PERIODICAL: Kauchuk i Rezina, 1960, No. 2, pp. 6 - 12

TEXT: Numerous testing methods of tear resistance in rubber are known (Refs. 1 - 17). Each country has its own standardized method, as shown in Table 1 and Figure 1. The importance of selecting a more rational and uniform method for general application is stressed. This method would depend on serveral aspects, such as accuracy, good reproducibility, rapid obtaining of results, the convenience of sample production, economical use of the tested material, sensitivity of the method to slight changes in the sample composition, etc. It is stated that a similar opinion can be reached by all only if the following specific main factors are established: 1) indices determining the tear, 2) the shape and size of the tested sample, 3) the method by which the stress is concentrated on the sample, 4) the difference between the resistance at the beginning of the tear and that of the subsequent start of the cut or occurring crack. Two major methods for

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

S/138/60/000/002/003/009
A051/A029

On the Testing Methods of Tear Resistance in Rubber

developing a means of rubber testing for tear are outlined. The most important aspects in this connection are summarized as follows: 1) T, the characteristic energy of the tear, should be taken as the criterion of the tear (see Formulae 1 - 4). 2) The shape and the size of the sample should be chosen in such a way as to ensure the destruction of the sample in a narrow section, where the greatest stress is reached. 3) The method for concentrating the stress does not affect the beginning of the tear. In all cases the tear begins when a concentration of the maximum stress and deformation in the part is reached. It is important that the results of the test do not depend on the size and the shape of the sample, the length of the cut and the shape of its peak. Apparently, it is not expedient to conduct tests on samples with cuts of short length, even by the existing methods. This becomes obvious from the equation $\sigma = F/t\,(b - c)$, where F is the stress at complete destruction of the sample, t is its thickness, b its width and c the length of the cut. 4) The difference between the resistance to the start of the tear and that of the further distribution of the cut or occurring crack, is not determined by the fact whether or not the cut has been

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

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A051/A029

On the Testing Methods of Tear Resistance in Rubber

made, or wether the concentration of the stress occurs without a cut (J.M. Buist, Ref. 17), but rather by the degree of concentration (distribution) of the stresses and their redistribution during subsequent tear. The author concludes that all the specific moments of rubber tear resistance testing are most successfully determined when samples are used which are deformed by simple expansion. It is expedient to improve and standardize the latter method. It should be used as the international testing method for rubber tear resistance. There are 3 figures, 5 tables and 28 references: 4 Soviet, 16 English, 1 German and 7 unidentified.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tire Industry)

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S/138/60/000/007/006/010
A051/A029

AUTHORS: Orlovskiy, P.N.; Lukomskaya, A.I.; Tsydzik, M.A.; Bogatova, S.V.

TITLE: An Evaluation of the Technological Properties of Carbon Black Rubber Mixtures on a Shifting Plastomer

PERIODICAL: Kauchuk i Rezina, 1960, No. 7, pp. 21 - 28

TEXT: The relationship between the technological properties of rubber mixtures (the shrinkage after the calender or the caterpillar press and the roughness coefficient) and the indices obtained on the shifting Mooney-type plastomer was determined. Methods for determining the tendency of the various mixtures to scorching were compared. The following mixtures were investigated: 1) three-component mixtures on a СКБ (SKB) rubber base, commercial stearin and Soviet carbon blacks (anthracene, jet and thermal), 2) three-component mixtures on a СКС-30А (SKS-30A) rubber base, commercial stearin and Soviet carbon blacks (gaseous channel and oven carbon blacks), 3) four-component mixtures on the above-mentioned rubber bases with combinations of various types of carbon black, 4) multi-component carbon black rubber mixtures based on tire mixture compositions. Table 1

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S/138/60/000/007/006/010
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An Evaluation of the Technological Properties of Carbon Black Rubber Mixtures on a Shifting Plastomer

is a list of the characteristics of the applied carbon blacks. The authors refer to a previous article (Ref. 1), where they outlined the methods used for the technological evaluation of the rubber mixtures under industrial conditions. The shrinkage of the rubber mixture after calendering or passing under the worm press is caused by the elastic restoration after deformation and can be determined from the changes in the initial dimensions of the mixtures in various directions. The shrinkage is a function of the direction as well as of the initial dimensions of the samples. Formulae are submitted for the calculation of the shrinkage and for the calculation of the initial thickness of the sample, t_o, and the length of the sample L. It is pointed out that the shrinkage of the mixtures varies due to the heterogeneity of the material and due to the heterogeneous state of tension, not only in various directions, but also at different parts of the material. That is why the surface of the material may be rough after shrinkage or may even change its shape. This complicates the measuring of the samples and the estimation of the shrinkage. However, the distortion of the shape enables one to judge the degree of the roughness. The roughness coefficient is taken to be $C = V/V_c$. The

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An Evaluation of the Technological Properties of Carbon Black Rubber Mixtures on a Shifting Plastomer

greater is its difference from unit, the rougher is the surface of the sample. The maximum thickness of the sample can also be measured without taking into consideration the change in the shape according to Figure 1. Formula 4 represents the relative roughness coefficient, which can be calculated from data obtained on the shifting plastomer (Ref. 1). The smoothness of the material 1/C would depend on the homogeneity and the ability of the material to retain its shape. The ratio R/v_2'' was taken to be the laboratory index of the elastic restoration to the viscosity according to Mooney. The viscosity data point to the expenditure of the power used. This is one of the factors which characterizes the shrinkage of the mixtures in the equipment. A quantitative coordination of the technological and laboratory indices was observed for the three-component carbon black rubber mixtures if the indices were expressed in relative units, i.e., in %, to the corresponding indices of non-filled mixtures. In this case the relative roughness coefficient could be determined, characterizing the quality of the processed mixture's surface on the shifting plastomer (according to the relative drop in the viscosity and the relative elastic reformation). There are 3 tables, 7 graphs, 1 diagram, 11 refer-

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

S/138/60/000/007/006/[illegible]
A051/A029

An Evaluation of the Technological Properties of Carbon Black Rubber Mixtures [illegible] a Shifting Plastomer

ences: 4 Soviet and 7 English.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tire Industry)

Card 4/4

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

S/081/61/000/019/082/085
B103/B147

AUTHORS: Lukomskaya, A. I., Reznikovskiy, M. M., Orlovskiy, P. N., Stukalova, A. F.

TITLE: Efficient laboratory method for determining vulcanization of rubber mixtures before due time

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 19, 1961, 523, abstract 19P315 (Tr. N.-i. in-ta shin. prom-sti, sb. 7, 1960, 154-167)

TEXT: To find the most efficient method of determining the scorching capacity of rubber mixtures, the authors compared the characteristics of the most usual laboratory methods with those characterizing the behavior of mixtures directly during the technological processing. Scorching is essentially affected by the following factors acting during the preheating of mixtures: deformation, its amount, rate, and periodicity; temperature and its duration; medium of preheating; volume of the prepared mixture to be preheated. It is most convenient to determine the scorching capacity of rubber mixtures by means of shift plastometers. [Abstracter's note: Complete translation.]

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

S/069/60/022/005/006/011
B015/B064

AUTHORS: Lukomskaya, A. I. and Dogadkin, B. A.

TITLE: The Possibility of Studying the Structure of Vulcanizates Filled With Carbon Black by Measuring Their Dielectric Properties

PERIODICAL: Kolloidnyy zhurnal, 1960, Vol. 22, No. 5, pp. 576-586

TEXT: The present paper discusses published data on the change of the dielectric constant ε' and the loss factor ε'' of the frequency $f = \omega/2\pi$ or temperature T for vulcanizates filled with carbon black. In this connection it is found that the temperature - frequency functions may be used in the quantitative determined of vulcanizates. On the basis of the characteristics obtained, it is possible to form an idea of the structure of vulcanizates filled with carbon black. If the value of the dielectric constant at high frequency ε'_∞ in dependence on the carbon-black content is known in a mixture p, the form factor Φ of the carbon-black particles can be determined: $\varepsilon'_\infty = \varepsilon'_1(1+\Phi p)$ (4) (ε'_1 = dielectric constant of the rubber phase). If Φ is independent of the carbon-black

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

The Possibility of Studying the Structure of Vulcanizates Filled With Carbon Black by Measuring Their Dielectric Properties

S/069/60/022/005/006/011
B015/B064

content, spherical carbon black particles are found at $\Phi = 1$, and extended ones at $F > 1$. A rise of Φ with the carbon-black content (Fig. 1) indicates the formation of a "structure" by the carbon-black particles (chain- or net structure). Since Φ changes in the same sense as the "structural" dielectric losses ε''_{str}, it is possible to determine the carbon-black structure from the experimental value ε''. In the course of previous investigations (Refs. 13-16), the authors observed at high frequencies and low temperatures that ε''_{str} is in agreement with ε''. At high temperatures and low frequencies (as well as in the case of direct current), it is possible to use conductivity for structure determination. Additional information on the structural changes of filled vulcanizates are obtained by direct measurement of ε' and ε'' during vulcanization. There are 6 figures and 27 references: 12 Soviet, 16 US, 8 British, 2 French, 4 German, and 1 Japanese.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tire Industry)

SUBMITTED: March 17, 1960

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APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKOMSKAYA, A.I.; ORLOVSKIY, P.N.; MEREZHANNYY, S.B.; STUKALOVA, A.F.; Prinimali uchastiye: SAMOKHODKINA, K.G.; KALINOVA, L.T.; GORINA, A.K.; STULOVA, V.T.

Effect of the surface-to-volume ratio of a test piece in the evaluation of the processing qualities of rubber blends. Kauch. i rez. 20 no. 4:36-42 Ap '61. (MIRA 14:5)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (for Lukomskaya, Orlovskiy, Merezhannyy, Stukalova).
(Rubber, Testing)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

S/069/61/023/004/001/003
B101/B125

AUTHOR: Lukomskaya, A. I.

TITLE: Mechanism of rubber reinforcement

PERIODICAL: Kolloidnyy zhurnal, v. 23, no. 4, 1961, 428-437

TEXT: The author intended to explain the mechanism of rubber reinforcement mainly with carbon black fillers by comparing published data. The interaction between rubber and filler according to B. A. Dogadkin et al. (Ref. 2: Kolloidn. zh. 18, 528, 1955) has been proved experimentally. R. S. Stearns's assumption (see below) that rubber molecules and carbon black are bound by "sulfur bridges" was refuted by the same dipole moment of filled and non-filled vulcanized rubbers (Ref. 14: A. I. Lukomskaya, thesis, M., 1951; B. A. Dogadkin, A. I. Lukomskaya, Dokl. AN SSSR, 88, 1015, 1953; Kolloidn. zh., 15, 259, 1953; ibid., 16, 34, 1954). According to W. F. Watson (see below), reinforcement is based on the interaction of free radicals with the surface of the carbon-black particles. L. Mullins (see below) proved that the strength of filled rubbers depends on preliminary deformation. Electron microscopic studies of the rupture process (E. H.

Card 1/3

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Mechanism of...

Andervs, A. Walsh, see below) showed that the rubber-filler interface is thus destroyed. The reinforcement is due to time processes. According to L. Mullins (Ref. 29, see below), considerable relaxation occurs in filled rubbers at a constant deformation rate. Rupture takes place stepwise. According to the author (Ref. 14), the chain structures of carbon black form the matrix on which the molecular chains of rubber are oriented. This was also radiographically proved by V. I. Kasatochkin, B. V. Lukin (Ref. 36: Zh. tekhn. fiz., 19, 76, 1950). On the basis of a paper by A. P. Aleksandrov, Yu. S. Lazurkin (Ref. 40: Dokl. AN SSSR, 45, 308, 1944), the following processes of deformation and rupture of filled rubbers are assumed: The unoriented rubber-carbon black bonds, are broken under the action of stress, and are then newly formed in oriented directions. The crack runs from one filler particle to another. The presence of filler chain structure increases the effective surface area of rupture. The theory of F. Bueche (see below) could not be substantiated experimentally, and probably hold for isotropic material only. In anisotropic filled rubber, partial separation of weak rubber-filler bonds already sets in during deformation. The formation of carbon black structures can only be explained by studying their surface activity. Abstracter's note: Since the present report contains a detailed discussion of Western papers, more than four English-language publications are given.

Card 2/3

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

Mechanism of...

There are 7 figures and 43 references: 25 Soviet-bloc and 18 non-Soviet-bloc. The six most important references to English-language publications read as follows: R. S. Stearns, B. L. Johnson, Industr. and Engng. Chem., 43, 146, 1951; W. F. Watson, Industr. and Engng. Chem., 47, 1281, 1955; Proceed. 3. Rubber Technol. Confer., London, 1954, p. 553; L. Mullins, N. R. Tobin, Proceed. 3. Rubber Technol. Confer., London, 1954, p. 397; E. H. Andervs, A. Walsh, J.Polymer Sci., 33, 39, 1958; Ref. 29: L. Mullins, International Rubber Conference, Washington, November 1959, p. 8; F. Bueche, J.Polymer Sci., 33, 249, 1958

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti, Moskva (Scientific Research Institute of the Tire Industry, Moscow)

SUBMITTED: March 26, 1960

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

S/138/62/000/004/007/008
A051/A126

15.9300

AUTHORS: Lukomskaya, A.I.; Gudkova, L.F.; Merezhannyy, S.B.; Orlovskiy, P.N.; Reznikovskiy, M.M.

TITLE: Measurements of the sliding of rubber mixes on metal under various conditions

PERIODICAL: Kauchuk i rezina, no. 4, 1962, 21 - 25

TEXT: The Mooney type shifting viscosimeter with a biconical rotor was used for studying the sliding phenomenon of rubber mixes on metal. The mathematical analysis for calculating the characteristics of sliding, introduced by Mooney, was applied, and the similarity of the two laws: viscose flow and external sliding of rubbers and rubber mixes was taken into account. Thus, methods for measuring the friction of rubber mixes against metal were developed: a) on a biconical shifting viscosimeter, working under stable conditions of a given rotational speed and pressure in the given tested material, using a smooth and a rough rotor; b) on a special device for determining the friction coefficient, working under non-stationary conditions of the given shifting load, sliding rate and rate of application of the normal load. The coincidence of the friction co-

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

Measurements of the sliding of rubber mixes on S/138/62/000/004/007/008
A051/A126

efficients of rubber mixes, determined under various testing conditions, is proven. It is shown that rubber mixes can also be characterized by the same elevated temperatures, at which adhering of the former to metal is greater than cohesion. In this case, a cohesion destruction of the tested materials is noted during testing and the results of the friction test correspond qualitatively to data obtained when testing for adhesion and maximum flow in expansion. Obtained experimental data show the possibility for measuring the sliding of rubber mixes along metal under various conditions, and a connection between the condition indices. A mathematical analysis is given. There are 4 figures and 3 tables. The reference to the most recent English-language publication reads as follows: M. Mooney, International Rubber Conference, Washington, November 8 - 13, 1959.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tire Industry)

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

S/138/62/000/009/001/002
A051/A126

AUTHORS: Gudkova, L.F., Lukomskaya, A.I., Reznikovskiy, M.M.

TITLE: Effect of testing conditions on the extent of elastic recovery of rubber mixtures

PERIODICAL: Kauchuk i rezina, no. 9, 1962, 17 - 21

TEXT: Conditions of deformation have an effect on the extent of elastic recovery of material after deformation. A simple mechanical model of elastic-viscous material, representing springs connected in series, was used to illustrate this effect. The complete deformation of shear γ was found to be:

$$\gamma = \gamma_2 + \gamma_3, \quad (1)$$

where γ_2 is the elastic deformation and γ_3 the viscous deformation. The modulus parameters G (of the spring) and η_3 (Voygt-element viscosity) were found to increase to the same degree with an increase in the filler content. η, the viscosity of the medium, increases more sharply. The shear tension was calculated from formula:

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

Effect of testing conditions on the extent of ....

$$\tau = G\gamma_2 + \eta \frac{d\gamma_2}{dt} = \eta_3 \frac{d\gamma_3}{dt}, \qquad (2)$$

where γ_2 and γ_3 are the elastic and viscous deformations, respectively. Under compression and expansion, at a constant volume during deformation, deformation ε and tension σ are determined by a relation similar to (2). The elastic deformation γ_2 is:

$$\gamma_2 = \frac{\eta_3}{G} \times B \left(1 - e^{-\frac{G}{\eta_3 + \eta} t}\right), \qquad (3)$$

under conditions of a given rate of shear deformation $d\gamma/dt = B = \text{const.}$ reached on a shear plastomer, under non-stationary conditions. When using the Williams-type plastomer under a given compressive load F, at standard duration of compression and recovery and at above-mentioned changes of parameters G, η and η_3, the elastic recovery depends little on the filler content. Using Mooney-type shear plastomers at a given rate of deformation, the elastic recovery drops with an increase in the filler content. Computed data on the nature

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of elastic recovery changes, according to filler content and depending on the testing conditions, were found to coincide with experimental findings from tests on plastomers of the Williams and Mooney types. The data obtained also show the importance of the selected testing conditions for determining the plasto-elastic properties. There are 3 figures.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tire Industry)

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKOMSKAYA, A.I.

Compression of elastic-viscous cylindrical bodies on plastometers with plane-parallel blocks. Dokl. AN SSSR 142 no.6:1285-1288 F '62. (MIRA 15:2)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti. Predstavleno akademikom P.A.Rebinderom.
(Elastic plates and rods)
(Plasticity)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

GUDKOVA, L.F.; LUKOMSKAYA, A.I.; REZNIKOVSKIY, M.M.

Effect of the testing conditions on the value of the elastic recovery of rubber compounds. Kauch.i rez. 21 no.9:17-21 S '62. (MIRA 15:11)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.
(Rubber—Elastic properties)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKOMSKAYA, A.I.

Flow of a viscoelastic fluid in circular, annular, and slot-type tubes. Inzh.-fiz. zhur. 6 no.6:120-127 Je '63. (MIRA 16:6)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti, Moskva.

(Hydrodynamics)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKOMSKAYA, A.I.

Adhesion and friction characteristics of unvulcanized rubber compounds. Kauch. i rez. 22 no.9:13-16 S '63. (MIRA 16:11)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

REZNIKOVSKIY, Mark Moiseyevich; LUKOMSKAYA, Aleksandra Il'inichna; ZUYEV, Yu.S., red.

[Mechanical testing of crude and vulcanized rubber] Mekhanicheskie ispytaniia kauchuka i reziny. Moskva, Khimiia, 1964. 525 p. (MIRA 18:2)

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L 48313-65 EWT(m)/EPF(c)/EPR/EWP(v)/T/EWP(j) Pc-4/Pr-4/Ps-4 WW/RM

ACCESSION NR: AP5008131 S/0138/65/000/003/0031/0035

AUTHOR: Lukomskaya, A. I. 15

TITLE: Strength of the rubber-to-rubber bond in multilayer systems in the case of symmetrical alternate loading

SOURCE: Kauchuk i rezina, no. 3, 1965, 31-35

TOPIC TAGS: rubber, fatigue strength

ABSTRACT: The strength of the rubber-to-rubber bond in multilayer systems was examined in the case of symmetrical alternate loading. Samples were tested using the test layout as shown in fig. 1 of the Enclosure. In the test a multilayered sample consisting of symmetrically placed external layers of rubber and a thin layer of rubber between them was placed between parallel moving surfaces. In the case of symmetrical alternate loading for the dynamic strength of the bonds between rubbers characteristic features are: the presence of border layers, the properties of which are not additive with respect to the properties of the rubbers comprising their borders; the effect of the relation of the size and mutual location of the layers.

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

L 48313-65

ACCESSION NR: AP5008131

The common features of the dynamic fatigue strength of the rubbers and border areas of multilayer systems are: validity of an exponential law for fatigue; independence of fatigue endurance from the frequency of loading; and reduction of the fatigue strength when hysteresis is increased. Orig. art. has: 3 figures, 5 equations.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tire Industry)

SUBMITTED: 00 ENCL: 01 SUB CODE: MT

NO REF SOV: 008 OTHER: 006

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APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

REZNIKOVSKIY, M.M.; LUKOMSKAYA, A.I.; PANIN, G.F.; KALINOVA, L.T.

Practical variant of a method determining the characteristic energy of rubber stripping. Kauch. i rez. 24 no.11:26-29 '65. (MIRA 19:1)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKOMSKAYA, A.I.

Remarks on the article by G.M.Barteneva, N.V.Zakharenko "Viscosity and flow mechanism of mixtures of polymers with fillers." Koll.zhur. 27 no.3:471-472 My-Je '65. (MIRA 18:12)

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

L 20408-66 EWT(m)/EWP(j)/T RM

ACC NR: AP6008404 (A) SOURCE CODE: UR/0374/66/000/001/0082/0086

AUTHOR: Zhbakov, B. I.; Lukomskaya, A. I.; Reznikovskiy, M. M.

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15

ORG: Scientific-Research Institute of the Tire Industry, Moscow (Nauchno-issledovatel'skiy institut shinnoy promyshlennosti)

TITLE: Certain peculiarities of the strength properties of crystallizing rubbers under increased temperature

SOURCE: Mekhanika polimerov, no. 1, 1966, 82-86

TOPIC TAGS: synthetic rubber, tensile strength, crystallization, thermomechanical property, physical chemistry property, vulcanization

ABSTRACT: Causes of the scattering of tensile strength values at 100C for crystallizing rubber test pieces were investigated. The dependence of the strength distribution on the rate of vulcanization was explained. The previous history of the heat treatment of crystallized rubber has a strong effect on the strength properties of vulcanized rubber. Orig. art. has: 5 figures. [Based on authors' abstract.] [NT]

SUB CODE: 11/ SUBM DATE: 23Feb65/ ORIG REF: 002/

Card 1/1 BK UDC: 678:43.01.539.4

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKOMSKAYA, A.M

LUKOMSKAIA, A. M.

Bibliograficheskii ukazatel' pechatnykh trudov i materialov o zhizni i deiatel'nosti A. M. Liapunova (In: Liapunov, A. M. Izbrannye trudy. Moskva, Izd-vo Akademii Nauk SSSR, 1948. p. 495-538)

Title tr.: Bibliography of published works and materials concerning the life and activity of A. M. Liapunov.

QA3.L485

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

Lukomskaya, A.M.

1 - F/W

Lukomskaya, A. M. Aleksandr Mihailovič Lyapunov. Bibliografiya. [Aleksandr Mihailovič Lyapunov. A bibliography.] Izdat. Akad. Nauk SSSR, Moscow-Leningrad, 1953. 268 pp. (4 plates). 8.20 rubles.

The bibliography is preceded by a sketch of Lyapunov's life by V. I. Smirnov (pp. 11–18), a survey of his scientific work by Smirnov (pp. 19–88), and a survey of work by Soviet mathematicians on the theory of stability by N. P. Erugin (pp. 89–96). The bibliography is divided into three parts: I) the published work of Lyapunov; II) material pertaining to his life and work; III) fundamental papers by Soviet mathematicians on the theory of stability of motion. Smirnov and V. P. Basov also took part in selecting and annotating the papers in III; this list spans the period 1929–1952 but the compilers disclaim any pretension to completeness. There is also an index to names occurring in the text.

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LUKOMSKAYA, A. M.

Bibliography - Physics

Index of surveys and original contributions published in 'Zhurnal tekhnicheskoi fiziki' Vols 1-20 (1931-1950). Reviewed by A. M. Lukomskaya. Sov. kniga No. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, June 1953, Uncl.

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030810017-0

LUKOMSKAYA, A.M.; SMIRNOVA, V.I., akademik, redaktor; CHEBOTAREV, G.A., doktor fiziko-matematicheskikh nauk, otvetstvennyy redaktor; PEVZNER, R.S., tekhnicheskiy redaktor

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GERTS, L.G.; SOLOV'YEV, S.P., doktor geologo-mineralog. nauk, prof., red.; LUKOMSKAYA, A.M., nauchnyy sotrud., red.; FROLOV, A.A., red.; SHUVALOVA, V.V., tekhn. red.

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